7. CONCLUSION AND FUTURE DIRECTIONS

7.1 INTRODUCTION

In wireless networks, when the mobile devices continuously move, they want to stay in communication without any break. But because of mobility, they have to be connected from one BS to another, which may be under the control of a different MSC. This process is called handover, which may cause delay due to which there is a possibility of disconnection and/or reduction in quality of service.

This thesis work attempted to reduce these difficulties and increase the quality of service which are summarized here.

7.2 SUMMARY OF WORK DONE AND CONTRIBUTIONS

(i) A modification in the processing of MSC, which will have an additional software package called MIC, is suggested without disturbing the original functions. This reduces the handover delay to the extent of 34 to 59% depending on the type of network and also provides additional security feature of increasing the number of bits of keys and parameters to be transacted.

(ii) Abrupt break in communication can take place due to various reasons. Under such conditions re-registration has to start all over again as if a new MN joins the networks with all authentications. Because of the provision of MIC, a procedure is suggested by which few steps can be avoided which reduces re-registration time and hence reduces dropage duration and less loss of packets. It is seen the reduction in delay is about 29 to 37.75%, depending on the type of network.
(iii) Since the mobile devices continuously move, they get connected to the nearest BS with stronger signal on their move. But then, in the immediate future, they have to be handed over to another BS which was already in the vicinity before connecting to previous BS. This additional handover is avoided by a suitable mechanism of estimating the location and direction of movement of the MN. Various procedures of estimating the location and direction of movement, based on the type of devices, has been suggested and thereby additional delay in handover is avoided.

(iv) Though a proper BS is selected by the foresaid methods, if the selected BS is already loaded fully and not having free TCH, the process of finding another BS has to start all over again. In this work, while selecting a BS itself, it checks for the capability if loaded fully, suggest a method to release some of the moving MNs on the border to another BS in the direction of movement of those MNs and gets relieved from the load and accept a MN approaching this BS. This procedure considerably reduces interruption of communication and reduces the duration of handover without any loss of packets.

7.3 FURTHER WORK IN THIS DIRECTION

The present day applications require larger bandwidth at higher speeds particularly for applications like video and online games. While handing over to a new BS, the BS can impose certain conditions and cost based on requirement of bandwidth and speed of operation and accept the MNs. This can be investigated further.